



GETTING STARTED WITH 3DEC

Duration	7 Hours
Location	Online – Microsoft Teams Platform
Instructor	Mr. Etienne Lavoine
Audience	Engineers with experience in numerical modeling
Pre-requirements	Pass the entrance test with 70% correct answers. Questions are related to basics of geomechanics.
Teaching Methods	<p>The topics covered during the training are approached in an evolutionary way, from simple to more complex.</p> <p>All our training courses are based on:</p> <ul style="list-style-type: none">• Concrete cases: examples of applications to illustrate and apply key concepts.• Sharing practices and experiences which enhances and enriches the training course.• Theoretical contributions: the instructors review key theoretical concepts in the field of rock and soil mechanics as well as numerical modeling. <p>Our instructors have solid modelling knowledge gained from the consulting studies they conduct for our customers. We value this knowledge by stimulating exchanges between professionals and promoting the sharing of learning within the group.</p>
Training Materials	<ul style="list-style-type: none">• Practical cases and scenarios• Powerpoint presentation• Free exchanges with the group• Theoretical contributions
Assessment Method	The course ends with an individual test – composed of questions on concepts covered during the course - to validate the knowledge acquired.
Objectives	<ul style="list-style-type: none">• Understand the <i>3DEC</i> numerical approach and the types of problems it can solve• Know how to manipulate the <i>3DEC</i> user interface to access and interpret results• Follow the recommended solution procedure to simulate a simple case

Program:

1. Introduction to Itasca software and *3DEC*
 - Overview of Itasca code applications
 - Discover the graphical user interface
 - Description of fundamental principles
2. Building the model
 - Overview of available methods for building the geometry
 - Cutting joints
 - Meshing
3. Modeling steps
 - Constitutive models for blocks and joints
 - Initial and boundary conditions
 - Solving and monitoring
4. Introduction to structural elements
5. Example of application: a simple tunnel excavation
6. Introduction to advanced tools
 - Scripting capabilities (FISH / Python)
 - Complex meshing tools
 - Complex physical processes (creep / dynamic / fluid)